



# AGRICULTURAL PEAK LOAD REDUCTION PROGRAM

## Project Fact Sheet

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### Waste Heat Driven Turbines

#### GOALS

- Convert boiler waste heat into useful energy
- Reduce peak electricity demand and usage

#### PROJECT DESCRIPTION

This project is located at the Campbell Soup Company's Dixon, CA plant and involves the site's evaporation equipment.

This project consists of the following:

1. Removal of two electric motors totaling 1850 horsepower (1 @ 1500 hp and 1 @ 350 hp) and replacing them with two steam turbines of the same horsepower ratings.
2. Increase the steam pressure from 150 psi to 300 psi on one of the site's three boilers.
3. Increase the condenser capacity in order to reduce the condensing temperature from 15°F to 10°F.



1500-hp Steam Turbine



Turbine Boiler Feed Water Pump

Dropping the condensing temperature by 5°F decreased the water rate by more than 40%. To increase the pressure from 150 psi to 300 psi, fuel consumption increased about 5%. These changes in the operational control points have recovered enough energy to power the two steam turbines resulting in more than one-megawatt demand reduction.

The estimated demand reduction was one thousand three hundred seventy-three (1,373 kW) kilowatts and the project was contracted at one thousand twenty-nine and 75/100 (1,029.75 kW) kilowatts.

Measurement and Verification shows a demand reduction (by comparison of pre and post utility records) of one thousand thirteen and 2/10 (1,013.2 kW) kilowatts.

#### **SITE BENEFIT**

- Reduced energy costs
- Reduced water usage and cost

#### **INDUSTRY BENEFIT**

The industry benefit is negligible because the technologies employed are not new; however, the power and water being saved benefit industry and the entire State of California.

#### **FUNDING AMOUNT**

- Project Cost \$987,000.00
- APLRP Contribution \$253,300.00 (Awarded at \$250/kW reduced demand)

#### **FOR MORE INFORMATION**

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